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Government of Kerala
2015



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തിരുവനന്തപുരം KERALA GAZETTE

ആധികാരികമായി പ്രസിദ്ധപ്പെടുത്തുന്നത്
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PART III

Stores Purchase

Fire and Rescue Services Department

e-TENDER NOTICES

(1)

No. F2-12098/2014-1.

27th December 2014.

e-Tenders in two cover system are invited from competent dealers for the supply of one number of Aerial Ladder Platform including its chassis with given Specifications to this Department. It can be increased to 2 or 3 numbers. The tender is to be submitted as e-tenders through <https://etenders.kerala.gov.in>. Since this is an e-tender, only those bidders who have enrolled in the above portal with their own digital signature certificate (DSC) can participate in the tender. e-tender document and other details can be obtained from the above e-portal.

The tender has two parts.

1. Technical bid.
2. Financial bid (BOQ) (Indian Rupee only).

Tender No. with PAC—KFRS/Global e-Tender No. 07/2014-15/SN—` 850 Lakh (Indian Rupee only).

Closing date and time of e-tender—2-3-2015, 5 p. m.

Last date and time of receipt of e-tender—2-3-2015, 5 p. m

Date and time of opening of e-tender:

1. Technical bid—6-3-2015, 11 a. m.
2. Financial bid—11-3-2015, 11 a. m.

Cost of e-tender (online submission)—` 25,000 + VAT @ 5% (Indian Rupee only).

Date upto which the rates are to remain firm for acceptance—31-3-2016.

EMD—1% of PAC in online payment.

Performance Security Deposit—5% of total contract amount inclusive of EMD to be remitted on receipt of supply order (Indian Rupee only).

Period of supply—Within 240 days of receipt of supply order.

The bidder desiring to take part in the bid shall log into <https://etenders.kerala.gov.in/> and then select tender and initiate payment. Bidders will be directed to the payment gateway page of the State Bank of Travancore. There are two options—State Bank of Travancore (SBT Net banking payment, payment through NEFT from other banks to the payment gateway of SBT).

For obtaining digital signature certificate (DSC) and necessary portal enrolment bidders can visit the website <https://etenders.kerala.gov.in/>. The DSC should be authorised by an Indian Certified Agency.

Tenders will be opened in the online presence of such tenderers or their authorized representatives who have logged in at the prescribed time of opening technical & financial bids. If the date fixed for opening happens to be a holiday/due to net failure the tenders will be opened in the next working day at the same time.

The price of the e-tender form shall be received only through online payment SBT/SBT NEFT.

The cost should be quoted in Indian currency only.

The tender has two covers

- Technical cover
- Financial cover

The first cover ie: the technical cover shall be uploaded with the following document.

1. Scanned copy of complied specification of the product intended to supply.

Scanned copy of the duly signed specification compliance statement in the following proforma shall be uploaded along with the offer, and the statement should be complete in all the details of specification. The bidder should upload the statement with complete details of specification even though there is no deviation for the product from the Departmental Technical Specification.

2. Scanned copy of the agreement in the prescribed format in Kerala Stamp Paper worth ` 100.
3. Brochure/Diagram/Photographs of the product intended to supply.
4. Work experience (copy of Supply Order, copy of Certificate regarding satisfactory supply of the item issued by the purchaser, etc. should be enclosed).
5. Scanned copies of the declaration by the bidder on Kerala Stamp Paper worth ` 100 to the effect that he/his partner/s or any of his directors is not involved in any Vigilance Case registered in connection with any supply made to this Department (Optional for the bidders from India only).

Soon on opening the technical bid of e-tenders, the committee constituted to evaluate the technical aspects of the instrument will meet and scrutinize the technical specification of the instrument submitted with the e-tender.

The financial bids belonging to those dealers/suppliers who qualified in the technical bid of the instrument required by Kerala Fire & Rescue Services Department alone will be considered.

On finalization of the same, the Second cover ie. the financial bids of the concerned competent firms will be opened for consideration.

The originals of Specification Compliance Statement and Agreement in stamp paper worth ` 100 shall be produced before the undersigned soon after the Financial Bid opening.

After opening the financial bid, financial evaluation is made in consultation with the DPC and the decision of the DPC shall be final and will be uploaded in the financial evaluation field of the e-tender site whether the tender is financially admitted or not and thereafter the contract will be awarded.

The committee headed by the Commandant General, Kerala Fire & Rescue Services Department will scrutinize the tenders received and will recommend suitably. The decision of the Commandant General in this regard will be final.

The right of acceptance or rejection of any e-tender without assigning any reason is solemnly vested with Commandant General, Kerala Fire & Rescue Services.

The rules and regulations prescribed for e-tenders by the Government of Kerala shall be applicable to this e-tender also.

Details with respect to the e-tender and the details of specifications of the item to be purchased can be obtained from the e-tender website <https://etenders.kerala.gov.in>.

Any legal disputes that may arise in relation to the e-tender formalities will be restricted to the jurisdiction of Thiruvananthapuram District Court/High Court of Kerala.

Conditions

1. Whether samples are essential : Pamphlets, Photograph, Drawings, CDs etc. should be forwarded along with the tender.
2. Period within which goods should be delivered : Within 240 days from the receipt of supply order.
3. Rates should be quoted, : f.o.r., Thiruvananthapuram for the delivery including all taxes, transportation charges, customs duty, expenditure for a technician for 5 years from the date of supply and 5 years AMC amount after warranty period.
4. Payment : 90% P a y m e n t against delivery at Thiruvananthapuram in good condition.
Balance 10% after the warranty period

5. Other Special Conditions :
- (1) A warranty of 36 months from the date of delivery of the item
 - (2) EMD 1% of PAC in online payment.
 - (3) Performance Security Deposit 5% of total contract amount inclusive of EMD to be furnished as mentioned in the Notice inviting e-Tender.
 - (4) The bidder should be the authorised supplier of the make and the document in this respect should be submitted along with the tender.
 - (5) Any firm whose proprietor, Partner or Director is involved in a Vigilance Case registered in connection with a supply made to this Department earlier is not eligible to participate in this tender and will be barred from participating in this tender.
 - (6) The Department intends to purchase 1 Aerial Ladder Platform during 2014-15 Financial year and one or two more Aerial Ladder Platforms in 2015-16 Financial Year. Hence the bidder should quote what would be the effective price, if it is for 1 unit, for 2 units and for 3 units, separately in the BOQ. The rate quoted should remain firm till and upto 31-3-2016.
 - (7) Anybody attempting to offer bribe or otherwise influence the officials of the Kerala Fire and Rescue Services will be disqualified from participating the tender.

- (8) An expert technician should be provided by the supplier firm for the maintenance of the Aerial Ladder Platform supplied by the firm for 5 years at their own cost from the date of supply and the service of the technician should be available at any time as and when required. The technician shall be responsible for the maintenance, upkeep and smooth running of the Aerial Ladder Platform/Aerial Ladder Platform supplied by the firm.
- (9) A 5 years AMC should be entered into by the qualified firm after the warranty period. The quoted amount should be inclusive of AMC.
- (10) Training programmes of appropriate duration should be conducted for the staff of this department as and when required for 5 years from the date of delivery at the cost of the qualified bidder.
- (11) The Volvo chassis must be as per the specification of Indian Road Rules.
- (12) Any manufacture of Aerial Ladder Platform anywhere in the world can participate in this tender online directly.
- (13) The bidder should have an account with any one Indian Scheduled Bank and all the transactions are permitted only through the same A/c. NRI Accounts are not permitted for this purpose.

- (14) Payment and other such matters will be only as per the norms of Kerala Store Purchase Rules.
- (15) The Technical Specification appended with this tender notice was formulated by a team of officers and it is recommendatory in nature. Wherever the recommendation contained in the Technical Specification is at variance with the terms, conditions or provisions in the tender notice, the terms, conditions and provisions in the tender notice would prevail.
- (16) The financial bid of the bidders who quote in foreign currency will be evaluated reckoning the exchange rate of such foreign currencies prevailing on the date of the opening the financial bid.

Specifications for Fabrication and supply of Aerial Ladder Platform 50-60 Meter Height for Fire Fighting and Rescue Purposes

1. General requirement

- 1.1. The Aerial Ladder Platform shall be designed specifically for the purpose of fire fighting and rescue and to enable firemen to go up over and above the other side of any obstruction. It shall comprise of main boom with Telescopic Sections and articulated/ telescopic boom with a cage mounted at the end of the boom and the entire unit shall be mounted on a Turn-Table on a Heavy Duty Diesel-Engine chassis of Volovo or Mercedes Benz chassis, preferably 8 × 4, having approx. 6000mm Wheel Base (as per CMVR 1989) with fully factory built cabin and suitable capacity PTO. The Aerial Ladder Platform Chassis shall comply the Euro IV/BS IV/emission norms in force.

- 1.2. The Aerial Ladder Platform shall be designed as per the design, operational stability and structural strength based on the criteria laid in EN 1777/NFPA/internationally approved norms and standards applicable for elevated raised platforms used for Fire Fighting and rescue operations and the certificate to that effect issued by the competent agency shall be enclosed with the tender. The vehicle shall be preferably CE marked.
- 1.3. The Aerial Platform shall be capable of use at any angle of elevation without any reduction of load capacity of the cage. It shall also rotate 380 degree at any angle of elevation as well as below ground level subject to boom remaining clear of vehicle body and or any obstruction.
- 1.4. The appliance shall be compact and fast on the road and easily maneuverable in the crowded streets and around sharp corners. The overall dimensions shall not exceed the limits specified herein.
- 1.5. The working height of the Aerial Ladder Platform shall not be less than 50m from the Ground and the Horizontal outreach shall be 21 to 25 Meter. The horizontal outreach of the cage 21m shall be attainable till the height of minimum 15 to 18m from ground.
- 1.6. A Telescopic Rescue Ladder shall be attached on the right hand side of the booms. The ladders shall be provided with sufficient width and handrails for rescue of the people at any height (working height) during rescue operations.
- 1.7. The Aerial Ladder Platform shall be electro hydraulically controlled, permitting precise and easy operations under the most difficult conditions, with ample reserve strength and stability.
- 1.8. Full safety interlocks shall be incorporated in the design so as to ensure complete safety in operations and long years of reliable and trouble free service, as far as possible the system shall be fail proof.
- 1.9. The design of the Aerial Ladder Platform shall allow a very large safety margin for extreme operating and climatic conditions. The safe working loads ratings shall include an allowance for the weight of water system and the reaction from the monitor jet while operation.
- 1.10. The vehicle shall have a leveling system to adjust axial and transverse movement to an angle not less than 7 degree. It shall be automatic in nature.

- 1.11. There shall be a full back up system for all boom movements and outrigger movement in case of failure of main hydraulic system.
- 1.12. The complete movement of the Aerial Ladder Platform shall be computer controlled and the system shall be checked for interference sensitivity according to IEC-810-2 standards.
- 1.13. The control system of the Aerial Ladder Platform shall be fully tropicalized and able to operate in the temperature range up to -15 to +60 degree centigrade and in a dusty and humid condition without reducing the maximum operating limits.
- 1.14. A battery operated Power Ascender with a safe working load of 200 Kg with adequate length of kernmantle ropes and other accessories shall be fixed at a suitable place in the cage, without affecting the normal rescue and fire fighting operations.

2. Chassis

- 2.1.1. The Chassis shall be of Volvo or Mercedes Benz, preferably 8 × 4, having approx. 6000mm Wheel Base (as per CMVR 1989) with fully factory built cabin and suitable capacity PTO. The Vehicle Chassis shall be a Right hand Drive and shall comply Euro IV/BS-IV/ emission norms in force.
- 2.2. The Chassis shall be homologated from the appropriate authority in India in case not already an approved model.
- 2.3. The engine shall be six cylinders, inline, diesel with direct injection, turbo charged with intercooler.
- 2.4. The engine shall develop minimum 500 HP (Minimum 10 HP more than the total operational requirement of the total equipment including all the stand by features).
- 2.5. The clutch shall be single plate, dry type, and power assistant.
- 2.6. The gearbox shall be synchronized with Crawler gear.
- 2.7. Rear Axle shall be Tandem Bogie type with Hub reduction and differential lock between the wheels and axles.
- 2.8. Chassis frame shall be 'C' Channel section made of high strength steel with cross members.
- 2.9. The steering shall be integral power steering with collapsible steering wheel and column.
- 2.10. The Front Suspension shall be leaf spring type and the rear suspension shall be reverses cam type with shock absorber in the front.

- 2.11. The Brakes shall be dual circuit airbrakes, with parking brakes acting on rear wheels.
- 2.12. Fuel Tank—Capacity shall be min. 300 liters with lockable fuel cap.
- 2.13. The Chassis shall be provided with 11.00R × 20 radial Tyres-11 nos. with sufficient number of spare tyres.
- 2.14. The Chassis shall be provided with single day type cab with RED color, made from high strength steel fully trimmed, external panels hot dip galvanized with hydraulic cab tilting mechanism. The cab suspension shall be provided with coil spring and shock absorber. The cab shall be provided with adequate ventilation, rear view mirrors, windscreen and windows, adjustable driver seat, wiper system and along with all other standard fitments.
- 2.15. The Electrical system shall be 24V, with suitable capacity batteries and alternator for charging the batteries.
- 2.16. The Chassis shall be supplied with standard tool kit, hydraulic jack of 20-ton capacity, operator's manual and workshop manuals.
- 2.17. The Chassis shall be fitted with gearbox mounted, suitable capacity Power Take off Unit to drive the hydraulic pump for boom movements.
- 2.18. The Chassis shall be directly procured by the tenderer confirming to above specifications and shall be got homologated with the appropriate authority in India. The transportation responsibility of the chassis up to tenderer's manufacturing facility lies with the tenderer. The Chassis shall be insured while in transit.
- 2.19. The Chassis shall comply all the provisions and enactment of Motor Vehicle Act 1988 and Central Motor Vehicle Rules 1989 and any amendment from time to time.

3. Operating Requirements & Dimensions of Finished Appliance:

The Vehicle shall comply the following basic/ specific requirements:

- 3.1. Max working Height : 50 to 60m
- 3.2. Height to working : 48 to 58m
cage bottom
- 3.3. Max working outreach : 21 to 25m
with 500kg cage load
- 3.4. Reach below ground : 6m
level
- 3.5. Rotation-Continuous : 360 degree

- 3.6. Safe working load : 500 Kg Minimum
in the cage on hard
level Ground with dry
monitor
- 3.7. Safe working load with : 200-300 Kg Minimum
monitor in the cage
Delivery up to 2250-
3500 LPM
- 3.8. Loading capacity of : 500 Kg Minimum
lifting eye under the
Cage (cage empty)
- 3.9. Operations at maximum : 12.0 M/Sec.
outreach with full
working load permitted
in wind speed up to
- 3.10. The unit will be : 1.5 times the maximum
suitable for test at cage load
the load
- 3.11. Operating time at full : As per EN1777/2010, NFPA
stroke for all
operations
- 3.12. Overall length in : 12m max (Depending
traveling position on chassis)
- 3.13. Overall width of the : 2.50m max
vehicle
- 3.14. Overall Height in : 3.90 m max (Depending
traveling position on the chassis)
- 3.15. Maximum width of : Maximum jacking
the vehicle when width of 7 meter
jacks are fully
extended on both
sides
- 3.16. Gross Vehicle Weight : 32-36 tons approx

4. Construction:

- 4.1. The appliance shall be robust in construction; materials used in construction shall be carefully selected for lightness and durability. Use of timber shall be restricted in body work and use of rubber shall be avoided as far as possible. Ferrous metal parts shall be treated for anti-corrosion by a method other than electro-plating.

5. Booms:

- 5.1. The vehicle shall perform the following functions/operations
 - 5.1.1. Elevation
 - 5.1.2. Depression
 - 5.1.3. Extension & housing of telescope sections
 - 5.1.4. Rotation 360 degree in either direction

- 5.2. All the operations shall be electro-hydraulically operated with the help of hydraulic cylinders, wire rops, chain etc. The system shall be purpose built to provide smooth takeoff, variable speed range and smooth slowdown, based on the criteria laid down under EN. 1777/2010, NFPA or any other relevant standards applicable for these kind of vehicles.
- 5.3. There shall be at least two/three booms, the first boom with telescopic extension providing direct movement and the other articulated/telescopic booms with vertical movement of approx. 180 degrees. The other booms shall provide an up-and-over capability of approx. 9 m throughout its vertical movement. Based on the selected outrigger position and cage load, the system selects automatically the maximum outreaches to all directions. The system capacity shall enable various outreach curves for each direction.
- 5.4. The booms shall be trapezoidal section for minimum wind catching area, welded construction; welding method shall be of latest technology (plasma Welding) to provide high durability and extreme accuracy. For high strength and minimum flexing of the boom sections only high tensile strength steels shall be used for load bearing structure.
- 5.5. The main boom elevation and lowering shall be controlled by two hydraulic cylinders that both have their separate safety devices and can alone carry the entire load in case of failure of any one of the cylinders.
- 5.6. All telescopic sections of the first boom shall move in a synchronized way and there shall not be any intermediate jerks during extension/retraction. Automatic slowdown mechanism at the beginning of the movement as well as end of the movement shall be provided to all boom movements. All the moving sections shall be fitted with adjustable guides/rollers to provide smooth and accurate movement. Various maintenance points shall be located well at hand either outside the boom or behind easily removable covers. The telescopic movement of the boom sections shall be controlled by the combination of hydraulic cylinder and double chains.
- 5.7. All booms shall be internally and externally primed and painted for long life span, treated against rust and corrosion.

6. Hydraulic Cylinders:

- 6.1. The Hydraulic cylinders shall be double acting, fitted with lock valves so as to prevent booms, working cage from lowering or the outriggers from retracting in case of pipe or hose failure.

- 6.2. The cylinders shall be provided with automatic dampers to prevent the pressure shocks and shall dampen the movement when a mechanical stop is reached.
- 6.3. Retraction of the outriggers shall be automatically prevented as soon as the booms have been lifted up from their transport position by way of electrical OR Hydraulic interlock system.
- 6.4. The main boom elevation and lowering has to be controlled by two hydraulic cylinders that both have their separate safety devices and both can alone carry the entire load in case of failure of any one of the cylinders.
- 6.5. Lifting of the booms from the transport position shall be prevented before the outriggers are in support position and there shall be a limiting circuit to prevent damage to the Drivers cabin by the first boom when not clear of the cabin.
- 6.6. All the movements shall be automatically limited in their extreme position and the working cage shall be prevented from working outside of the permitted working range in any position.
- 6.7. An emergency stop switch shall be provided on both controll panels, which shall switch off the hydraulic pressure of all movements and shall stop the vehicle engine. The unit shall be supplied with a manual lowering System and Emergency Hydraulic Back-up System.

7. Turn-Table:

- 7.1. The truntable shall be fully integrated steel structure containing center post, slip rings, water line of 100 mm stainless steel/Aluminium, etc. duly fastened to the main frame by means of slewing ring .
- 7.2. The rotation for the turntable shall be controlled by hydraulic motor with brakes through oil immersed reduction unit.
- 7.3. The base control station shall be attached to the turntable so as to rotate with it and be accessible in all positions of the turntable.
- 7.4. The hydraulic distributor (center post) shall be mounted in the center of the turntable at an accessible position and shall carry the hydraulic pressure and return lines, electrical supply lines and water line allowing continuous rotation in either direction.
- 7.5. The fasteners retaining turntable to the rotation mechanism shall be of proper grade and shall be torque properly.

- 7.6. The rotation gear box fastener shall be of proper grade and torque with proper backlash.
- 7.7. There shall be provision for the manual rotation of turntable in case of failure of hydraulic system.
- 7.8. Pins securing the hydraulic cylinders to boom and turntable shall be properly installed and secured.
- 7.9. The hydraulic hoses, tubing and connections provided in the turntable shall be free from kinks, chaffing or leaks.
- 7.10. The turntable tail swing shall not exceed the vehicle dimension in any direction.

8. Main Frame:

- 8.1. The main frame shall be welded; box section type made from high tensile steel plates and shall absorb all the stresses generated by platform and outriggers.
- 8.2. The front mounting bolts of the main frame shall be spring loaded to allow the chassis frame to flex when the outriggers are fully down to avoid any stress concentration on the chassis frame.
- 8.3. The main frame shall incorporate hydraulic oil tank, outrigger beam housing and it shall be bolted to the chassis frame and the slew ring support plate shall be welded to the top of the main frame and shall be precision machined.

9. Stabilising/Jacking System:

- 9.1. The jacking system shall consist of hydraulically operated four outriggers mounted in their housings in the main frame. Each housing shall be fitted with adjustable guides to provide smooth and accurate movement of the outrigger beam. The outrigger piston rods shall be completely protected by closed steel profile.
- 9.2. The jack shall be H-type construction, each outrigger shall have two separate hydraulic cylinders, the first of which pushes the horizontal outrigger beam out and the second shall push the vertical jack down.
- 9.3. The jack shall be provided with ground pressure sensors/switch, which shall be correctly actuated before the booms are operated to ensure proper stabilization.
- 9.4. Each vertical jack shall be provided with self-aligning footplate to spread the load evenly and allow the operation on uneven ground.
- 9.5. The jacking shall be able to level the vehicle up to 7 degree sideways and fore and aft with manual and automatic leveling system.

- 9.6. The automatic jacking system shall be controlled preferably by handheld remote control box provided with backlit push buttons for following operations:
 - 9.6.1. Left side outrigger beam out
 - 9.6.2. Right side outrigger beam out
 - 9.6.3. Automatic levelling
 - 9.6.4. Outrigger back to transport position.
- 9.7. All the jack movements shall be infinitely variable within a maximum jacking width of 8m.
- 9.8. The jacking systems shall allow operating each jack individually and the jack projection shall be recognized by the controlling system and the maximum outreach shall automatically be calculated as per the jacks width.
- 9.9. The jacks shall be controlled individually or in pair with lever/joystick/button and the control panel shall be situated in such a position that, the operator will have clear look to the right and left hand side while extending the jacks. The control panel shall be located at the rear side of the vehicle.
- 9.10. Yellow/red flashing warning lights shall be provided at the outer most point of the jacks to identify the position of the jacks during night operation.
- 9.11. Four wooden spreader plates shall be provided for the use, when the vehicle is to be operated on soft ground.
- 9.12. The vehicle shall be provided with inclinometer which will measure both fore, aft and sideways inclination of the vehicle up to minimum 10 degree.
- 9.13. The jacking system shall also have automatic "One Button" variable jacking system with two independent automatically operating and self-controlling safety systems to prevent an unsafe configuration.
- 9.14. The jacking 1 Stabilizing controlling box shall be located in such a way that it allows operator to see outrigger at all times preferably remote control box with wonder lead containing all the control levers, switches and indication lamps for the operation of stabilization system.
- 9.15. In addition, the following controls shall be provided on jack control panel:
 - 9.15.1. Activating the outrigger controls.
 - 9.15.2. Operating hour gauge.
 - 9.15.3. Switch for the battery driven back up for the hydraulic system.
 - 9.15.4. Visual indications for leveling of the vehicle (fore, aft & sideways).
 - 9.15.5. Emergency stop.
 - 9.15.6. Controls for the automatic jacking.
 - 9.15.7. Engine start 1 stop button for diesel engine of standby system.
- 9.16. The locker containing outrigger controls shall be fitted with an automatically operating door switch and a light for night operation.
10. *Electronic Safety and Outreach System:*
 - 10.1. The computer-controlled system shall allow the outriggers to be positioned and to select the working cage load according to working situation. The system shall be capable to select automatically the maximum allowed outreach to front, rear, right and left side. Based on calculations and parameters saved in the system to guarantee exactly the same outreach regardless of the external influences like wind speed and direction, temperature, friction of the cylinders etc.
 - 10.2. The display units of the system shall show maximum possible outreach and position of the working cage in real-time along with other details.
 - 10.3. The electronic system shall be approved according to the valid standards and directives. The system shall be EMC tested (EU directive 891336/EEC) and CE type tested by TUV or any other appropriate agency.
 - 10.4. Wherever applicable, the electronic system shall comply to Electro Magnetic Compatibility Certificate for the limiting system and a certificate to this effect has to be produced from an independent accredited agency for Electro Magnetic Compatibility (EMC) for the Electronic (Computerised) control system.
 - * The outreach calculation shall be equal to the system of a turntable ladder. Based on the selected outrigger position and cage load, the system shall select automatically the maximum outreaches to all directions. The system capacity shall enable infinitely outreach curves for each direction.
11. *Cage:*
 - 11.1. The working cage shall be fixed to the boom with proper pivoting point.
 - 11.2. The cage shall be made of tubular steel 1 Aluminum 1 stainless steel profile, welded together and painted with special paint with high durability, the dimensions of the working cage shall be approx. 2.0m (length) × 0.9m

(width) × 1.1m (height) and it shall be fitted with an inward opening door located at suitable place to enable safe access to the cage. The top railing shall be part of the cage door so that entering into the cage without bending is possible. The rescue entrance shall be located in the front and top railing is formed for safe and easy access. There should be provision for the safe entry from the cage to the rescue ladder on the side of the boom, and the rescue ladder should be so arranged to effect a proper escape way to the ground from the cage.

- 11.3. The cage shall be designed for 1.5 times the maximum cage load.
- 11.4. When the load selection is made at turntable or cage the system shall automatically show the maximum outreach to all directions with selected cage load and outrigger position.
- 11.5. The control panel in the cage shall be fitted in such a way that the operator shall see the booms clearly at all the times.
- 11.6. The cage shall be kept horizontally leveled in any position of the booms. An automatic hydraulic device shall control the leveling system with fully automatic and independent safety circuit in case of an uncontrolled leveling failure. There shall be a master switch for the automatic leveling system, so that it can be isolated and then manually controlled system activated. The leveling of the cage shall be controlled by hydraulic actuators and use of chains and wire ropes are forbidden.
- 11.7. The working cage shall have capability to turn 45 degrees to each side from its center position. The movement shall be powered hydraulically with controls in the working cage and at the turntable control panels. The center position of the cage shall be indicated by a visual indication at both control panels.
- 11.8. At the front of the working cage there shall be a drop down rescue platform with automatically operating safety railing to provide additional safety during rescue and fire fighting. The dimensions of the rescue platform shall be approx. 1.30 m × 0.5m with minimum 180 kg load carrying capacity.
- 11.9. In the housed position the cage shall not obstruct the view from driver's cabin, in any case.

12. Hydraulic System:

- 12.1. The Hydraulic power shall be provided by a reliable and adequate capacity variable displacement axial piston pump for boom movement and separate pump for cage leveling system to ensure positive cage leveling at all the time even in the case of failure of main pump, which shall be driven by the vehicle power take off.
- 12.2. When no operation of the aerial device is activated, the pump shall rotate on minimum flow and minimum pressure. When one of the movements is operated the control valve automatically increases the pressure to a pre-set constant level and the oil flow to the amount that is needed for the movements activated. The flow of the pump shall be sufficient to give the supply of hydraulic oil at required pressure to all the movements activated simultaneously at full stroke without affecting the preset speed.
- 12.3. There shall be a provision of instant couplings for attachment of manometer in each pressure line for checking pressure of each circuit.
- 12.4. The filtration system of the hydraulic oil shall consist of suction strainer in the suction line, pressure filters in each pressure circuit, air filter on the reservoir. All the pressure filters shall have blockage indicator.
- 12.5. All hydraulic cylinders shall be double acting with hard chrome plated piston rods and shall be fastened by means of self-aligning ball bearings to prevent lateral forces from damaging the seals or piston rods of the cylinders.
- 12.6. Hydraulic oil tank shall be integrated or fitted into the main frame and shall have a proper heat dissipation system. The tank shall be fitted with oil level gauge, temperature gauge and suction connections with closing valves for easy maintenance and draining outlet with closing valve.
- 12.7. There shall be hydraulic oil cooler for continuous use in hot temperature.

13. Back-up for the Hydraulic System:

- 13.1. There shall be a separate single cylinder diesel engine of HATZ make, (silent pack) mounted at suitable place, preferably in one of the lockers driving the hydraulic pump, which will provide independent means of hydraulic power in case of failure of main engine of vehicle. The Diesel engine shall have sufficient power to drive all the movements of the booms but at a reduced speed. The engine shall be able to start from all control panels.

- 13.2. In addition to the above, there shall be battery driven Hydraulic pump, which provides independent means of hydraulic power in case of failure of main engine and standby engine of vehicle. The battery pump can be operated from all control panels.

OR

For emergency operation two separate hydraulic pumps shall be available. Out of the two pumps, one pump shall be electrically driven by the power generator and the second pump shall be a fully manual operated hydraulic pump.

14. Controls and Safety:

- 14.1. The Electrical supply needed for control system shall be taken from the vehicle battery which shall be charged when the engine is running.
- 14.2. When the vehicle is in operation yellow flashing warning lights mounted on the outriggers shall automatically remain on.
- 14.3. All booms and rotation movements shall be controlled electro-hydraulically by means of proportional valves. The proportional value shall not be sensitive to changes of ambient or oil temperature, and shall provide smooth, safe and very accurate movements even in most severe operating conditions.
- 14.4. The speed of the first boom for lowering and extension shall be automatically reduced at maximum outreach. The first boom lifting speed shall be reduced before the maximum elevation.
- 14.5. All control movements can be performed by the control system from both control panels and the outreach can be selected by the positioning the outriggers. The variable system shall consist of two displays, the graphical display and real time information about the outreach and the cage position and also to show possible movements according to cage position by animated arrows. In the text display there shall be main texts for:
 - 14.5.1. Warnings
 - 14.5.2. Emergency situations
 - 14.5.3. Help manual
 - 14.5.4. Fault finding system
- 14.6. Signal lamps shall be provided for following functions:
 - 14.6.1. For the outriggers, in transport position in driver's cab.
 - 14.6.2. For the outriggers working position on all control panels.
 - 14.6.3. For the P.T.O. engaged in the driver's cab.
 - 14.6.4. For the transport position of the booms in driver's cab.
 - 14.6.5. For the middle position of the rotation on the turntable and cage control panel.
 - 14.6.6. For the exceeding of the safe working load in the cage on the turn-table and cage control panels.

15. Turntable and Cage Control Panels:

- 15.1. The turntable control panel incorporating all control levers and safety system indicators shall be fitted with a rotatable arm at the side of the turntable. The control panel shall be placed and locked conveniently in its operating position to provide the operator with an excellent view over the different indications of the safety systems.
- 15.2. The control panel can be rotated and locked in a position enabling direct access from the decking of the vehicle into control station.
- 15.3. The control station shall be fitted with convenient adjustable seat to provide comfort even in case of prolonged operation. The platform underneath the control position shall be covered by non-slip aluminium plate.
- 15.4. The control panels at turn table and cage shall be exactly alike which will reduce the risk of confusion amongst operators under stress or even panic. Both the control panels shall be provided with weather protection covers/box.
- 15.5. The turntable control panel shall have a change over switch to select the control station from which the operation is performed. Both control panels shall be fitted with following warning, indication and control devices and shall be marked by clear symbols for easy recognition.
 - 15.5.1. Visual and audible indication for exceeding safe working load.
 - 15.5.2. Visual warning for activation of working cage collision guard system.
 - 15.5.3. Visual indication for ground pressure of the outriggers.
 - 15.5.4. Visual indication for the rescue ladder "Rungs in alignment".
 - 15.5.5. Visual indication for the center position of the booms.
 - 15.5.6. Visual indication for the center position of the working cage.
 - 15.5.7. Starting and stopping of chassis engine.

- 15.5.8. Switch for the operating battery driven pump for hydraulic back-up system.
- 15.5.9. Starting and stopping switch for standby diesel engine for hydraulic back-up system.
- 15.5.10. Joystick/control levers for each movement push buttons/joystick for cage stowing emergency stop button.
- 15.5.11. Overriding of the automatic working cage leveling system.
- 15.5.12. Manual operation for the working cage leveling system.
- 15.5.13. Visual indication for fully extended left & right outriggers.
- 15.5.14. Switches for activating bleed down system.

16. *Controls and Indicators in Drivers Cab:*

- 16.1. The following control and indicators shall be provided in driver's cabin:
- 16.2. Visual warning for outriggers in travelling position.
- 16.3. Visual warning for any of the equipment lockers being on.
- 16.4. Visual warning for the booms not being fully in transportation position. Switch with visual indication for rotating beacons.
- 16.5. Switch with visual indication for siren unit.
- 16.6. Microphone for the public address system.
- 16.7. Visual warning for the rear axle being locked, if the feature is installed.
- 16.8. Visual warning for the main current being switched on.

17. *Safety Devices:*

- 17.1. All the hydraulic cylinders shall be fitted with lock valves directly integrated into the cylinder structure to prevent the booms, the working cage or the outriggers from retracting in case of a pipe or hose failure.
- 17.2. Retracting of any of the outriggers shall be automatically prevented as soon as the booms have been lifted from their traveling position. Similarly lifting of the booms from the traveling position shall be prevented until the outriggers have reached the ground pressure

OR

The vehicle shall be equipped with four emergency buttons, two for jacking system and the other two for the boom operation. To ensure quick re-start of the system, after emergency stop, the chassis engine shall not be switched down in case an emergency button has been activated (Only the hydraulic system shall be cut off, either for the jacking system or boom system).

- 17.3. The leveling system of the vehicle shall give audible warning at cage & ground level if permitted inclination increases due to changing ground conditions.
- 17.4. All boom movements shall be limited at their most extreme positions making it impossible for the operator to reach an unsafe configuration by normal means of operation. The movements having direct influence on the stability of the Aerial Ladder Platform shall be fitted with two separate limiting circuits, the first one retarding and stopping that particular movement, and the second one deactivating the whole electric and hydraulic system shall the first circuit fail.
- 17.5. All major movements such as lifting of the first boom to its maximum elevation, and extending the telescopic movement or lowering the first boom at the maximum outreach shall be fitted with slow-down devices to provide smooth deceleration, and starting of the movement shall also be retarded for smooth acceleration.
- 17.6. Inadvertent damaging of the drivers cab by the main I first boom shall be prevented by a system preventing lowering of the booms and rotation movement when the booms are near the driver's cab.
- 17.7. An overload warning system shall be fitted to give an audible and visual warning in case of exceeding the safe working load in the cage and at the same time boom movements are slowed down and outward boom movements shall be stopped. A safety device to prevent the monitor operation when the cage load is above the maximum permissible limit.
- 17.8. A cage collision guard shall be provided and shall be integrated to cage load sensor to provide additional safety when operating in darkness or in dense smoke. The system shall stop all movements and give visual and audible warning.
- 17.9. An emergency stop button shall be provided on both control panels to provide immediate and complete 'freezing' of all systems in case of an unexpected emergency.
- 17.10. All the control levers shall be "Dead Man" type and shall automatically come to zero position when released.
- 17.11. There shall be a manual lowering system, to lower the booms and bring the working cage down onto the ground even if no hydraulic pressure and electric is available with rotation mechanism.

- 17.12. When one of the outriggers has not enough ground pressure, the system shall give an audible and a visual alarm. If two outriggers loose ground contact, unsafe boom movements shall be stopped.
 - 17.13. The cab of the vehicle shall be protected from damage by the booms or working cage. Working in front of the vehicle close to the cab shall be possible. When in the cabin protection area, the movements of the booms shall slow down and stop smoothly however, the opposite movement of the booms and the cage shall be possible to get out of the cabin protection area. Cab protection system/mechanism shall be manually overridden by push button.
 - 17.14. There shall be a system, which shall bring the rungs of the ladder section in alignment automatically.
 - 17.15. The vehicle shall be equipped with electrical sensors for temperature and pressure of the Hydraulic oil. The temperature and pressure shall be shown on every display unit.
 - 17.16. The vehicle shall be fitted with tilt alarm to give audible & visual alarm on display if the vehicle is leveled incorrectly. The tilt alarm angle shall be adjustable.
 - 17.17. The system of the vehicle shall be based on clear and easy to understand symbols. If texts are used on master screens, the operator shall be able to change the language in use. All measure units of master screens shall be changeable to locally used format by operator.
 - 17.18. The wind speed sensor shall be fixed in the working cage. The wind speed shall be shown on every display unit. When wind speed is higher than allowed the system shall give audible and visual alarm. The wind speed meter shall not limit the use of the platform.
18. *Body Work And Equipment Lockers:*
- 18.1. The structure for the bodywork shall be made up of various Aluminium/stainless steel profiles properly fixed together by riveting, bolting or welding.
 - 18.2. The complete external paneling of the rear body shall be made from Aluminum sheet fitted to the structural member either by gluing or riveting.
 - 18.3. The complete flooring of the rear deck shall be made from nonskid aluminium chequered plate of 3.0 mm thick properly riveted or bolted to the superstructure members.
 - 18.4. For the easy access to the rear deck from ground level, there shall be sufficient nos. of recessed steps on both sides of the vehicle provided with suitable grab handles.
 - 18.5. Sufficient nos. of lockers shall be provided on both side of the vehicle for keeping various accessories and equipments. The locker shall be so made that load distribution on both sides is equal. All the lockers shall be provided with good quality rolling shutters properly sealed for water and dust ingress. All the doors of the lockers shall be fitted with automatic switches activating the light as soon as the door is opened and also activating the warning light in drivers cab.
 - 18.6. The drivers cab shall have 1+1 seating arrangements, the seats shall have 3 point safety belt.
19. *The Water System:*
- 19.1. The waterway shall be completely made of stainless steel/Aluminum. The nominal diameter of the water way shall be minimum 100 mm. There shall be sufficient number of 63 mm male inlet (as per BS standard) with a closing ball valve at each side at the rear of the vehicle from where the water line leads through the center post in the turntable up into the working cage where the water monitor is mounted. The telescopic water pipe shall be provided on the side of booms properly supported and protected with flexible and durable pressure hose on the boom knuckles. The water way should be sufficient to maintain a horizontal throw of 70 meters (In the same horizontal plane) and a vertical throw of 25 meters (from the monitor flange).
 - 19.2. The water line shall be protected from possible over pressure by means of relief valves (set at a pressure of 16 legfcm²) mounted underneath of the turntable.
 - 19.3. A Telescopic water pipe shall be provided on the side of the booms, which shall be made of stainless steel/Aluminum. Moving sections of this pipe shall be externally ground & chromium plated for long life. Seals between the sections are of low friction type and can be easily tightened if so required. On the other booms a fixed stainless steel pipe shall be installed and at the boom pivoting points, flexible and specially reinforced pressure hose shall be used. Ail hoses shall be fixed to the pipe with reliable span-lock connections.
 - 19.4. An additional outlet of 63 mm (as per BI Standard) with female coupling and closing ball valve shall be provided to the water piping in the cage. There shall be drain cocks fitted in the piping to enable to drain the water from the piping after use.

19.5. On the front side of the cage underneath, a nozzle shall be provided for water spray curtain system to protect the cage occupants from radiant heat. Control valve of water spray curtain system shall be located inside the cage.

19.6. The cage shall be provided with 20 m hose reel with Fog/Jet nozzle and shall be connected to main water line with control valve in the cage.

20. *Water Monitor :*

20.1. Water monitor shall be connected to the piping system and shall be mounted outside the cage in a suitable position so that the entire cage floor area can be fully utilized in extreme rescue situations.

20.2. The monitor shall be made of light alloy and fitted with jet/fog nozzle of Akron/ TFT/ Rosenbauer make with maximum capacity of 2300 - 3500 LPM at minimum 8 bar pressure.

20.3. The Monitor shall have Horizontal rotational movement to left and right side up to 355° and also vertical up and down movement.

20.4. There shall be ball valve type control valve for the monitor and the monitor shall be manually operated.

21. *Inter communication system:*

21.1. There shall be fully transistorized talk back inter communication system fitted between turntable and the cage.

21.2. The system shall be combined microphone and loudspeaker for hands free operation and shall be located in the cage. The turntable control station is also equipped with microphone, which shall be integrated in the loudspeaker with volume control.

21.3. The microphone and the loudspeaker shall be sealed properly and it shall be protected from the ingress of water, dust and humidity.

22. *Electric System:*

22.1. The electrical supply shall be taken from the vehicle batteries, which are kept, charged when the engine is running. Voltage of the system shall be 24 V DC and all circuits shall be provided with specific fuses depending on the current consumption of that circuit.

22.2. When the main current is switched on, yellow flashing warning lights located at each outrigger and booms pivoting point and underneath of the working cage shall automatically be switched on.

22.3. For night operation the rescue cage shall be equipped with 2 x 24 volts, 70watts, spot lights with swivel mounting bracket shall be fitted at the cage railing in the front side to provide extra safety during night operation. The switch for these lights shall either be provided on the light itself or on both the control panels.

22.4. Two rotating beacon lights shall be provided on each side of the drivers cab roof with Amber color lens. The switch for switching the beacons on and off with suitable signal light shall be integrated in the control panel of siren cum public address system.

23.. *Siren and public Address System:*

23.1. There shall be an electric siren unit of reputed make, fitted on the roof of the vehicle cabin or at a suitable place with the control unit mounted conveniently inside the driver cabin. It shall have the fast (yelp) and slow (wail) sound modes with integrated switch for rotating beacon lights.

23.2. There should be a command microphone, fitted with push-to-talk switch, which allows the public address message to override the siren function. These operations should be possible from driver's cabin.

24.. *Boom/rescue Ladder:*

24.1. A telescopic rescue ladder system shall be attached on the right hand side of the booms. The design shall be such that it forms a direct and continuous rescue way with no crossover platforms or similar obstacles at the boom joints.

24.2. The ladder shall be attached on the boom structure at several points throughout its length for stability even when operated in windy conditions. Extension movement of the ladder is automatically synchronized with the telescopic movement of the first boom and shall not require a separate control device.

24.3. Both control panels shall be fitted with visual indication for "safe to climb" (rungs in alignment) position of the ladder.

24.4. There shall be a safe access at the turntable from the ladder down to the decking for a continuous way from the maximum height down to the ground.

24.5. The ladder assembly shall be made from aluminium alloy of sufficient strength to withstand the weight of 8 persons at a time and shall have Suitable handrails for easy climbing. The ladder should have enough width for rescue operations and the distance between two rungs shall not be more than 310 mm.

- 24.6. Wherever applicable, welding quality certificate confirming to ISO 3834 - 2: 2005 from an independent accredit agency for plasma welding shall be obtained and submitted to the department.
- 25.. *Digital Disply Unit and Fault Finding System:*
- 25.1 The vehicle shall be provided with full color displays situated at turntable and the cage control panels.
- 25.2. The display shall show the location of the fault if occurred in the system while operating the vehicle.
- 25.3. The control system of the vehicle shall have self-fault finding system. If any fault occurs during the operation, the system shall find out the same and shall show the location of the defective component on the display. The system shall incorporate simple test screens to enable testing of the working cage and the turntable control panels. The tests shall also cover display unit, push buttons, joysticks and control lamps.
- 25.4. For maintenance purposes the following tools shall be provided as standard supply:
- 25.4.1. Faultfinding system and fault register
- 25.4.2. Status screens for sensors, switches, hydraulic valves, control lamps, etc.
- 25.4.3. Total operation and hour meters.
- 25.4.4. Operation and hour meter since last service
- 25.4.5. Service counters and alarm for general maintenance.
- 26.. *Breathing Airway System:*
- 26.1. A Breathing Airways System of Drager/ Scott/Sabre brand, with minimum 2 Numbers, each of 45/60 m duration breathing air cylinders, with backup, shall be incorporated in the chassis/turn table.
- 26.2. Minimum 2 Nos. of standard facemasks with 25m long, high pressure, hose reel for air supply shall be provided in the cage.
- 26.3. The air supply hose reel and the face masks shall be stored, safely, in weather proof boxes.
- 27.. *Painting:*
- 27.1. Before painting all surfaces of steel structures shall be carefully shot blasted after which they shall be primed and then applied the coat of approved paint. The final paint thickness of the paint film shall not be less than 100 microns. All the booms shall also be painted from inside.
- 27.2. For very high corrosion resistance of hollow structures such as steel profiles of the working cage, booms, outrigger beams and housings shall be treated with anti-corrosion protection preferably with "TECTYL"
- 27.3. The following Paint shades shall be used:
- 27.3.1. Working cage & wheel rims : White aluminium RAL 9006
- 27.3.2. Working cage support, boom Sections, Turntable and related Cylinders : White RAL 9010
- 27.3.3. Mainframe, outriggers and Body work including cabin : Red RAL 3000
- 27.3.4. Chassis frame touch-ups : Chassis original tone
- 27.4. The word "KERALA FIRE & RESCUE SERVICES" shall be painted on both side (both in Malayalam & English) of the vehicle at suitable place as per the instructions of the Department. The emblem of this department shall be painted on both side of the vehicle in natural color.
- 27.5. The emblem of FIRE BRIGADE shall be painted on both side of the vehicle in Natural color
28. *Accessories:*
- 28.1. Wooden outrigger ground pads/ plates with brackets – 4 Nos.
- 28.2. Working range diagrams, at turntable & in the cage – 2 Nos.
- 28.3. Marking of safe working load in the cage – 1 No.
- 28.4. Unit type marked at the boom – 2 Nos.
- 28.5. Warning labels and instruction plates – 1 set
- 28.6. Operation and maintenance manuals for Aerial Ladder Platform Chassis, standby diesel engine – 2 Sets
- 28.7. Plug for 24 V working light at the turntable and the working cage – 1 No.
- 28.8. Lifting hook under the working cage, capacity 400kg – 1 No.
- 28.9. Hydraulic pressure gauge – 2 Nos.
- 28.10. Set of tools & accessories required for the repairs & maintenance of Aerial Ladder Platform, chassis, & other systems – 1 Set

28.11. Safety belts for cage occupants – 5 Nos.

29.. *Instruction Manuals:*

29.1. Two sets of complete instruction manual for the operation and maintenance of Aerial Ladder Platform unit (including all systems), stand by systems, chassis and itemized spare parts list shall be supplied along with electrical circuit diagrams, hydraulic circuit diagrams.

29.2. All the manuals, circuit diagrams, literature etc. shall be in English language.

29.3. The vehicle shall be equipped with fault finding and monitoring system and it shall be available on every personal computer connected to web. This system shall also show the position and track the vehicle.

30.. *Drawings:*

30.1. The complete detailed drawings of Aerial Ladder Platform duly mounted on chassis specified herein shall be submitted along with the tender.

30.2. The working range diagram along with all the details shall also be submitted along with the tender.

31.. *Stability:*

The stability of the vehicle (in traveling position) when fully equipped and loaded (excluding crew member), with hydraulic platform resting on the resting stand and without extending the stabilizing jacks shall be such that it shall remain stable and shall not overturn even if the surface on which the vehicle stands has inclination on either side from the horizontal as per the standards stipulated under EN 14043/NFPA standards. The tenderer shall specifically mention the angle of overturning in their offer. The manufacturer to that effect shall furnish a certificate at the time of supply.

32.. *Training:*

32.1. The manufacturer's service engineer shall undertake the training for three weeks in the operation and maintenance of the aerial ladder platform for the operational staff of this department. Cost on this account shall be included in the offer.

32.2.1. The training regarding the repairs, maintenance, of the chassis and Aerial Ladder Platform including all systems shall be imparted to the nominated officers and mechanics of this department for a period of one week at the factory premises of the equipment manufacturer.

32.2.2. The successful tenderer shall supply free of cost all the tools and accessories required for the training. The cost on account to & fro travel, accommodation for one week shall be included in the basic cost of vehicle.

33. *Warranty:*

33.1. The manufacturer/supplier shall furnish a warranty for the complete unit for a period of 24 months from the date of acceptance of the vehicle at Kerala Fire & Rescue Services Headquarters, Thiruvananthapuram in perfect working condition.

33.2. The manufacturer shall also guarantee for the supply of spare parts & service for chassis and Aerial Ladder Platform including all systems for a minimum period of 10 years from the date of supply of the vehicle.

34. *R. T. O. Requirements:*

The vehicle shall be equipped with all the accessories required for registration of the vehicle and shall conform to Motor Vehicle Act, 1988 and Central Motor Vehicle Rules, 1989 or any amendment incorporated from time to time.

35. *Deviation:*

Any deviation from the above department specification shall be pointed out separately with detailed explanation.

36. *Inspection:*

The Department will depute a group of officers/authorized representative to carry out the inspection and the testing of the fully built vehicle at the factory premises of the vehicle manufacturer prior to dispatch. The travelling and accommodation cost should be included in the basic cost of the vehicle. It is obligatory to the supplier to provide all the assistance and equipment for the inspection and testing of the vehicle at their premises.

37. *General:*

37.1. The decision on purchase of any machine will depend on the overall performance of the machine rather than individual specifications.

37.2. The tenderer should provide details of the after sales service arrangements to ensure prompt and efficient after sales service anywhere in Kerala.

COMPLIANCE STATEMENT

Scanned copy of the duly signed specification compliance statement in the following performa shall be uploaded along with the offer and the statement should be complete in all the details of specification. The bidder should upload the statement with complete details of specification even though there is no deviation for the product from the Departmental Technical Specification.

**Specification compliance statement for
Aerial Ladder Platform**

Sl. No.	Detail of Departmental Technical Specification	Detail of the product offered	Deviation from Departmental Technical Specification, if any
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1

(2)

No. F1-14176/2014/KFRS-1.

7th January 2015.

e-Tenders in two cover system are invited from competent dealers for the supply of 3000 Nos. of Helmet with Visor with respective specifications to this Department. The tender is to be submitted as e-tenders through <https://etenders.kerala.gov.in>. Since this is an e-tender, only those bidders who have enrolled in the above portal with their own Digital Signature Certificate (DSC) can participate in the tender.

e-Tender document and other details can be obtained from the above e-portal.

The tender has two parts:

1. Technical bid.
2. Financial bid (BOQ).

Tender No. with PAC—KFRS/E-Tender/Re-tender No. 38/2014-15—` 20 Lakhs.

Closing date and time of e-tender—9-2-2015, 5 p. m.

Last date and time of receipt of e-tender—9-2-2015, 5 p. m.

Date and time of opening of e-tender:

1. Technical bid—13-2-2015, 11 a. m.
2. Financial bid—19-2-2015, 11 a. m.

Cost of e-Tender (online submission)—` 3,000 + VAT @ 5%.

Date up to which the rates are to remain firm for acceptance—31-3-2015.

EMD—1% of PAC in online payment.

Security Deposit—5% of total contract amount inclusive of EMD to be furnished on receipt of the supply order as online payment.

Period of supply—Within 20 days of receipt of supply order.

The bidder desiring to take part in the bid shall log into <https://etenders.kerala.gov.in> and then select tender and initiate payment. Bidders will be directed to the payment gateway page of the State Bank of Travancore. There are two options—State Bank of Travancore SBT Net banking payment, payment through NEFT from other banks to the payment gateway of SBT.

For obtaining Digital Signature Certificate (DSC) and necessary portal enrollment bidders can visit the website <https://etenders.kerala.gov.in>.

Tenders will be opened in the online presence of such tenderers or their authorized representatives who have logged in at the prescribed time of opening technical & financial bids. If the date fixed for opening happens to be a holiday/due to net failure the tenders will be opened in the next working day, at the same time.

The price of the e-tender form shall be received only through online payment—SBT/SBT NEFT.

The cost should be quoted in Indian currency only.

The tender has two covers:

- Technical cover
- Financial cover

The first cover ie., the technical cover shall be uploaded with the following document:

1. Scanned copy of complied specification of the product intended to supply.
2. Scanned copy of the agreement in the prescribed format in Kerala Stamp Paper worth ` 100.
3. Brochure of the product intended to supply.
4. Work experience certificate or other relevant details.
5. Scanned copies of the declaration by the bidder on Kerala Stamp Paper worth ` 100 to the effect that he/his partner/s or any of his directors is not involved in any Vigilance Case registered in connection with any supply made to this Department.

Soon on opening the technical bid of e-tenders, the Committee constituted to evaluate the technical aspects of the equipment will meet and scrutinize the documents along with the technical specification of the equipment submitted with the e-tender.

The financial bid belonging to those dealers/suppliers who qualified in the technical bid of the equipment required by Kerala Fire & Rescue Services Department alone will be considered.

On finalization of the same, the second cover ie., the financial bid of the concerned competent firm will be opened for consideration.

The originals of Complied Technical Specification, Agreement in stamp paper worth ` 100, Declaration in stamp paper worth ` 100, brochures and Experience Certificate shall be produced before the undersigned soon after the Financial Bid opening.

After opening the financial bid, financial evaluation is made only after consultation with the DPC and the decision of the DPC shall be final and will be uploaded in the financial evaluation field of the e-tender site whether the tender is financially admitted or not and thereafter the awarding of the contract.

The Committee headed by the Commandant General, Kerala Fire & Rescue Services Department will scrutinize the tenders received and will recommend suitably. The decision of the Commandant General will be final for the award of the contract.

The right of acceptance or rejection of e-tender without assigning any reason is solemnly vested with Commandant General, Kerala Fire & Rescue Services.

The rules and regulations prescribed for e-tenders by the Government of Kerala shall be applicable to this e-tender also.

Details with respect to the e-tender and the details of specifications of the item to be purchased can be obtained from the e-tender website <https://etenders.kerala.gov.in>.

Any legal disputes that may arise in relation to the e-tender formalities will be restricted to the jurisdiction of Thiruvananthapuram District Court.

CONDITIONS

1. Whether samples are essential : Pamphlets, Photograph, Drawings etc. should be forwarded along with the tender. Sample shall be supplied at the earliest.
2. Period with in which goods should be delivered : Within 20 days from the receipt of supply order.
3. Rates should be quoted including all taxes and transportation charge and 3 years AMC. : f.o.r,Thiruvananthapuram.
4. Payment : 90% Payment against delivery at Thiruvananthapuram in good condition.
5. Other Special Conditions :
 1. A warranty of 24 months from the delivery of the item and there after 3 years AMC.
 2. EMD—1% of PAC in online payment.

3. Security Deposit—5% of total contract amount inclusive of EMD to be furnished on receipt of the supply order as online payment as mentioned in the Notice inviting e-Tender.
4. Any firm whose Proprietor, Partner or Director is involved in a Vigilance Case registered in connection with a supply made to this Department earlier shall be barred from participating in this tender.
5. Canvassing in any manner at any time shall disqualify of the tenderer.

Technical Specification for Fire Fighter Helmet With Visor

1. The helmet shall be full-shell class
2. The helmet shall be made of high temperature resistant, anti-impact, anti abrasion material.
3. The helmet shall prevent the head and neck of fireman from accidents.
4. The helmet shall be suitable for all head sizes ranging from 50 to 66 cm.
5. The chin and neck strap shall be adjustable, properly padded, and shall be provided with quick release buckle.
6. The Neck protection accessories shall be made of fire resistant metal.
7. Visor
 - (a) The complete assembly of visor screen with suitable provision for attachment with the helmet.
 - (b) It shall be made optically clear and transparent poly carbonate sheet of 3 ± 0.2 mm thickness.
 - (c) The visor shall be of adjustable type and shall have provision for bolting to the shell of the helmet.
 - (d) The visor shall be made of scratch proof material.
8. The colour of the helmet shall be bright or fluorescent orange in colour.
9. The weight of the helmet shall not exceed 1.5 kg.
10. The emblem of The Kerala Fire and Rescue Services shall be embossed on the front of the helmet.
11. The product shall be certified by CE/EC or ISI marked.

COMPLIANCE STATEMENT

A specification compliance statement in the following Performa shall be submitted along with the offer, and the statement should be complete in all aspect and should cover each and every details of specification.

Specification compliance statement for Helmet

Sl. No.	Detail of Departmental Technical Specification	Detail of the product offered	Deviation from Departmental Technical Specification, if any
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1

(3)

No. F1-13439/2014/KFRS-1. 7th January 2015.

e-Tenders in two cover system are invited from competent dealers for the supply of 4 Nos. of Portable Air Compressors (Petrol) with respective Specifications to this Department. It can be increased to 50%. The tender is to be submitted as e-tenders through <https://etenders.kerala.gov.in>. Since this is an e-tender, only those bidders who have enrolled in the above portal with their own Digital Signature Certificate (DSC) can participate in the tender.

e-Tender document and other details can be obtained from the above e-portal.

The tender has two parts.

1. Technical bid.
2. Financial bid (BOQ).

Tender No. with PAC—KFRS/E-Tender/Re-tender No. 37/2014-15—` 20 Lakhs.

Closing date and time of e-tender—9-2-2015, 5 p. m.

Last date and time of receipt of e-tender—9-2-2015, 5 p. m.

Date and time of opening of e-tender:

1. Technical bid—13-2-2015, 11 a. m.
2. Financial bid—19-2-2015, 11 a. m.

Cost of e-Tender (online submission)—` 3,000 + VAT @ 5%.

Date upto which the rates are to remain firm for acceptance—31-3-2015.

EMD—1% of PAC in online payment.

Security Deposit—5% of total contract amount inclusive of EMD to be furnished on receipt of the supply orders as online payment.

Period of supply—Within 30 days of receipt of supply order.

The bidder desiring to take part in the bid shall log into <https://etenders.kerala.gov.in> and then select tender and initiate payment. Bidders will be directed to the payment gateway page of the State Bank of Travancore. There are two options—State Bank of Travancore SBT Net banking payment, payment through NEFT from other banks to the payment gateway of SBT.

For obtaining Digital Signature Certificate (DSC) and necessary portal enrolment bidders can visit the website <https://etenders.kerala.gov.in>.

Tenders will be opened in the online presence of such tenderers or their authorized representatives who have logged in at the prescribed time of opening technical & financial bids. If the date fixed for opening happens to be a holiday/due to net failure the tenders will be opened in the next working day, at the same time.

The price of the e-tender form shall be received only through online payment, SBT/SBT NEFT.

The cost should be quoted in Indian currency only.

The tender has two covers

- Technical cover
- Financial cover

The first cover i.e., the technical cover shall be uploaded with the following document.

1. Scanned copy of complied specification of the product intended to supply.
2. Scanned copy of the agreement in the prescribed format in Kerala Stamp Paper worth ` 100.
3. Brochure of the product intended to supply.
4. Work experience certificate or other relevant details.
5. Scanned copies of the declaration by the bidder on Kerala Stamp Paper worth ` 100 to the effect that he/his partner/s or any of his directors is not involved in any Vigilance Case registered in connection with any supply made to this Department.

Soon on opening the technical bid of e-tenders the committee constituted to evaluate the technical aspects of the equipment will meet and scrutinize all the tender documents along with the technical specification of the equipment submitted with the e-tender.

The financial bid belonging to those dealers/suppliers who qualified in the technical bid of the equipment required by Kerala Fire & Rescue Services Department alone will be considered.

On finalization of the same, The Second cover i.e., the financial bid of the concerned competent firm will be opened for consideration.

The originals of Complied Technical Specification, Agreement in stamp paper worth ` 100, Declaration in stamp paper worth ` 100, Brochures and Experience Certificate etc. supply shall be produced before the undersigned soon after the Financial Bid opening.

After opening the financial bid, financial evaluation is made only after consultation with the DPC and the decision of the DPC shall be final and will be uploaded in the financial evaluation field of the e-tender site whether the tender is financially admitted or not and thereafter the awarding of the contract.

The committee headed by the Commandant General, Kerala Fire & Rescue Services Department will scrutinize the tenders received and will recommend suitably. The decision of the Commandant General will be final for the award of the contract.

The right of acceptance or rejection of e-tender without assigning any reason is solemnly vested with Commandant General, Kerala Fire & Rescue Services.

The rules and regulations prescribed for e-tenders by the Government of Kerala shall be applicable to this e-tender also.

Details with respect to the e-tender and the details of specifications of the item to be purchased can be obtained from the e-tender website <https://etenders.kerala.gov.in>.

Any legal disputes that may arise in relation to the e-tender formalities will be restricted to the jurisdiction of Thiruvananthapuram District Court.

CONDITIONS

1. Whether samples are essential : Pamphlets, Photograph, Drawings, CDs etc. should be forwarded along with the tender.
2. Period within which goods should be delivered : Within 30 days from receipt of supply order.
3. Rates should be quoted including all taxes and transportation charge and AMC and 3 years after warranty period : f.o.r., Thiruvananthapuram
4. Payment : 90% Payment against delivery at Thiruvananthapuram in good condition.
5. Other Special condition :
 1. A warranty of 24 months from the date of delivery of the item.
 2. EMD—1% of PAC in online payment.
 3. Security Deposit—5% of total contract amount inclusive of EMD, to be furnished on receipt of the supply order as online payment as mentioned in the Notice inviting e-Tender.
4. Any firm whose proprietor, Partner or Director is involved in a Vigilance Case registered in connection with a supply made to this Department earlier shall be barred from participating in this tender.
5. Canvassing in any manner at any time shall disqualify the tenderer.
6. Training will be given by the Bidder as and when it is required by the Department.
7. Three years AMC after Warranty period should be provided.

Technical Specification for High Pressure Breathing Air Compressor

The compressor should be portable, high Pressure, air cooled breathing air compressor, used for refilling / re-charging of air cylinders (for SCBA sets, SCUBA and water mist systems) at a Pressure of 200 and 300 bar. The compressor will be a multi-stage unit with free air delivery of 100 LPM for standard filling norm—0 to 200 bar. The compressor shall be an enclosed type with steel frame powder coated having carrying handles. The compressor should be provided with air intake filter inter coolers, after cooler and final pressure safety valves. Detailed specifications will be as follows.

- Free Air Delivery —100 liters per minute (for standard filling norm)
- Filling Time—Cylinder 10 litre—0—200 bar 20 minutes.
- Filling Pressure—300 and 200 bar.
- Drive—V. Belt.
- Prime Mover—HONDA Make Petrol Engine.
- Power—Above 5 HP.
- Type of Lubrication —Splash Type.
- Filling Connection—One meter long hose with filling adapter for 300 bar (DIN Type) with Special Provision/Adapter so that same can be used to refill 200 bar cylinders (DIN and INT) also.

Dry weight—Below 45 kg.

Compressor System:

The compressor will be a multi stage air- cooled high pressure compressor with inter cooled between stages and after-cooler after final stage, safety valve etc. The air should be sucked in via suction filter to remove dust particles in air and then it should be compressed in the compressor. After compression the moisture should be separated and air should be filtered in the main filter cartridge to remove all impurities to make it suitable for breathing.

Tool Kit/Oil and Instructions:

Necessary tool kit for compressor along with first fill of oil and operating manual should be supplied with the compressor. Additional 2 litres of lubricating oil for compressor (to purify air) should be provided.

Spare Parts:

The supplier should provide two suction filter elements, two main filter cartridge.

Approvals:

Compressor manufacturers should be an ISO 9001 certified company. Air quality should be as per EN 12021 or equivalent breathing air quality standards.

Certificate to be submitted with offer and at the time of supply.

Warranty:

Compressor should be supplied with warranty against manufacturing defects for 24 months from the date of commissioning.

Commissioning Support:

The supplier should provide free commissioning at site and should train the operators on use and operation of the compressor, trouble shooting and normal maintenance of the Compressor.

COMPLIANCE STATEMENT

A specification compliance statement in the following Performa shall be submitted along with the offer, and the statement should be complete in all aspect and should cover each and every details of specification.

**Specification compliance statement for
Portable Air Compressor**

<i>Sl. No.</i>	<i>Detail of Departmental Technical Specification</i>	<i>Detail of the product offered</i>	<i>Deviation from Departmental Technical Specification, if any</i>
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Fire & Rescue Services
Headquarters,
Housing Board Junction,
Thiruvananthapuram.

JOE KURUVILLA EASOW,
Director (Admn.),
For *Commandant General.*